

HANDBOOK OF COGNITIVE ARCHAEOLOGY: PSYCHOLOGY IN PREHISTORY

**Edited by Tracy B. Henley, Matt J. Rossano and
Edward P. Kardas**

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Handbook of Cognitive Archaeology: Psychology in Prehistory is an ambitious interdisciplinary volume containing 28 chapters organized into four major categories: Developmental (I), Cognitive (II), Social (III) and Clinical (IV) Psychology. In addition, two preceding forewords provide a historical overview to the discipline of Cognitive Archaeology and stress the need for cross-disciplinary collaboration in order to properly establish cognitive evolutionary theories. Here, I present a summary of the different chapters, followed by a critical review.

Chapter one introduces us to the background of Evolutionary Psychology by looking at psychologist Wilhelm Wundt. Editors Kardas and Henley also present their final aim: to produce reliable approaches to the study of Cognitive Archaeology, that, in their own words, “can still be called objective and found acceptable to entire communities of scholars from disparate disciplines” (p. 8). The following chapters (two to four) draw attention to both causes and consequences of certain hominin physiological processes and brain development. They explore changes in dietary patterns and social behaviour that could have either influenced or benefitted from brain and cognitive enhancement, especially in relation to hominin life histories and childhood interaction. Daniel L. Krebs (chapter five) and Darcia Narvaez (chapter six) explore the question of morality. Krebs addresses it as an adaptive trait, proposing that moral traits might have helped humans to gain the evolutionary benefits of sociality

and cooperation. Narvaez's atypical paper consists of a critique of so-called "Western scholarship" and "modern civilizations" (pp. 104–119). The author comments that "uncivilized societies", though not exactly specifying what she meant by this, "often do not leave lasting marks for archaeologists to find later" (p. 115), a statement that both Prehistory Archaeology and Ethnology can prove incorrect. Narvaez argues that Cognitive Archaeology can make us "less anthropocentric" and "lengthen the view of humanity and propel a more positive view of human nature and human potential" (p. 115), yet she does not provide any applicable methods for this. Her suggestions seem to be based on general assumptions on life expectancy and health in the so-called uncivilized societies and thus, it seems to this reviewer that the author is unaware of the concrete methods or scopes behind archaeological science in general, and Evolutionary Cognitive Archaeology in particular. Finally, Gordon Burghardt addresses the role of play in cognitive evolution and argues that it is the emergence of mental play which makes us human, and that from which other human traits, such as religion, language, or morality, derived.

Part II starts with the question of generativity, the capacity of creating a large number of structures through a limited set of rules, such as in language. Michael Corballis (chapter eight) links its existence to the emergence of mental travel, planning and language. In a similar way, Krause and Sanz (chapter 10) look at the adaptability implications of mental time travel and episodic memory through behavioural studies conducted in animal species, arguing that they might not be exclusive to humans. In chapter nine, Ceri Shipton proposes three broad stages in human cognitive evolution: normativity, recursion and abstraction, which he links to Acheulean overimitation, Levallois technology and Late Palaeolithic behaviour, respectively. Moreover, Horacio Fabrega (chapter 11) focuses on Natural Semantic Metalanguage to address the cognitive capacities of pre-*sapiens Homo*, while Gabora and Smith (chapter 12) suggest two major cognitive evolutionary transitions: *Homo ergaster/erectus* appearance and the emergence of so-called 'behavioural modernity' at around 100,000 years ago. Derek Hodgson (chapter 13) explores the symmetry and proto-aesthetic component of Late Acheulean handaxes, and the potential cognitive mechanisms behind these. Finally, Wynn and Coolidge (chapter 14) present a model for the interpretation of technical cognition that draws from ethnographic research and their own model on expert performance (Wynn et al. 2017). By looking at modern primate tools and the archaeological record, they conclude that expert technical cognition had a long evolutionary history and can be dated back to 2.5 Ma.

In Part III, both Merlin Donald (chapter 15) and Camilla Power (chapter 19) explore a recurrent topic in cognitive studies: language. Donald considers it as the product-and-consequence of hominin sociality and technical behaviour, while Power addresses its relationship with ritual, egalitarianism and social dominance. Sociality is also the subject of discussion in chapter 16, together with concepts such as cultural transmission and learning. Here, Mark Nielsen relates overimitation to the social aspect of religion and scientific methodology, which for him are expressions of cumulative culture. Advancing chronologically, chapter 17 looks at iconographic remains from the early Neolithic site of Göbekli Tepe (Turkey), and the social and cognitive implications of ritual practices, iconography and the appearance of hierarchical structures. Linking to this, Matt Rossano (chapter 18) explores how social intelligence, cooperative abilities and ritual practices make us humans. He suggests that *Homo sapiens'* survival compared to Neanderthals might be due to ritual practices that favour more cohesive and cooperative social groups. Though not extending it to ritual practices, social cooperation is also addressed by Kim Sterelny (chapter 20), who argues that through time, it resulted in the appearance of norms and normative behaviour. In the last chapter of Part III (chapter 21), Timothy Taylor shifts back to a wider perspective and explores the methodological challenges for the study of human sexual behaviour in Prehistory.

The last section of the volume starts by looking at the concept of emotion. Terrence Twomey (chapter 22) relates it to controlled fire use and argues that fire's social component must have required an enhanced degree of emotion regulation. Expanding into emotion, palaeopsychology and psychopathology, Brian Hayden (chapter 23) explores the relationship between sociopaths, the archaeological and ethnographic evidence of secret societies and their influence in certain prehistoric cultures. This links to discussions about shamanism, rock art and mental illness by David Whitley (chapter 24). Contrary to what one might assume, Whitley argues that emotional condition, mental illness and madness is part of what defines us as "cognitively modern humans" (p. 464). In chapter 25, Hagen and Tushingham explore the origins of psychoactive drug use, which seems to be derived from long-time exposure to dietary toxins. Nicholas Humphrey (chapter 26) discusses the potential evolutionary implications of suicide, and how it might be related to rationality and specific cognitive skills, such as self-awareness and the Theory of Mind. After this, Paul Pettit explores the archaeological record and evolutionary history of mortuary activities, and their symbolic and cognitive

implications. He argues that social interaction with the dead is present in both Neanderthals and early modern humans, and might have required a certain degree of symbolism. In the final chapter, the three editors provide an integrative summary of the issues discussed in the volume and stress that both psychology and Cognitive Archaeology can benefit from increased collaboration.

In the first instance, and generally contrasting to other recent publications in the matter (Overmann and Coolidge 2019; Wynn and Coolidge 2017), the present volume includes a higher number of specialists in Evolutionary Biology, Psychology and Neuroscience, compared to Prehistoric archaeologists. By no means should archaeologists be put off by this. On the contrary, the volume by Henley and colleagues supposes a breath of fresh air to the common discussions (sometimes dead ends) on cognitive evolution from Prehistory to now. Nevertheless, one particular critique can be levelled at some of the chapters in Part I. While wider discussions are welcome, certain chapters in this section do not base their results in any concrete empirical archaeological data. Instead, some of the theories seem to be based on general assumptions of human evolution (chapter two), or on analogies between modern humans and non-human primates (chapter four). While this is perfectly valid, it is worth remembering that such analogies should be made with caution. Moreover, some of these studies (chapters three, five and six) seem to lack an extensive background in human evolution, which occasionally leads to the misuse of terms such as ‘early *Homo*’, or to the incorrect dating/placing of the earliest technologies or hominin species within the general context.

While Part I generally contains more theoretical discussions, through Parts II to IV the volume shifts to practical and evidence-based models, providing well-established starting points from which investigations on a complex subject such as Cognitive Archaeology can draw upon. Factors such as environmental pressures, adaptive traits, enhanced technical competence, brain size or social cognition are considered in Parts II and III, reviewing some major questions in human cognitive development. Finally, Part IV, with both frequently (ritual/funerary behaviour) and infrequently (psychopathology and suicide) debated topics, opens up new horizons to the continuous debate on human cognitive capacities.

It is perhaps the strongest point of this volume that both authors and editors are conscious about the complexity and challenges that the study of Cognitive Archaeology involves. Instead of trying to mask these and give solutions that fit them all, or present this book as the definitive manual for

a Cognitive Archaeology methodological approach, they discuss a wide variety of cognitive mechanisms and evolutionary and historical periods. From investigations based on, among others, primate behaviour, ethnography and even psychopathology, *Handbook of Cognitive Archaeology* involves research spanning from remote pre-*Homo* times to the first civilizations and modern hunter-gatherers societies. Overall, editors Henley, Rossano and Kardas indeed fulfil their objective, producing a brilliant example on what the much-needed cross-collaboration among academic disciplines can bring to research on human cognition and its evolutionary history.

References

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